English translation of the amended sheets of International Preliminary Examination Report

CLAIMS

1. Resistor array comprising N lines of commands N_i, with i being a strictly positive integer, M columns of commands M_j, with j being a strictly positive integer, and NM resistors R_{ij}, each resistor R_{ij} being commanded by the line N_i and the column M_j, wherein at least one of the resistors R_{ij} has a negative thermal coefficient resistance and is associated with a thermally activatable component, characterised in that it has means for adjusting the time for which the command voltage is applied to at least one of the resistors R_{ij}, in particular to each resistor R_{ij}, so as to obtain the desired output.

2. Array according to claim 1, characterised in that each resistor R_{ij} is associated with a thermally activatable component.

3. Array according to one of claims 1 or 2, wherein at least one of the activatable components is a microvalve.

4. Array according to one of claims 1 to 3, wherein all of the resistors R_{ij} have negative thermal coefficient resistances.

5. Array according to one of claims 1 to 4, characterised in that at least one of the negative thermal coefficient resistors is made of a single material.

6. Array according to claim 4, characterised in that all of the negative thermal coefficient resistors are made of a single material.

7. Array according to one of claims 1 to 6, characterised in that all of the resistors are identical.

8. Array according to one of the previous claims, wherein the negative thermal coefficient resistor includes tantalum nitride, a nickel-chromium alloy, or a nitride from refractory material.

9. Array according to one of the previous claims, wherein the negative thermal coefficient resistor has a temperature coefficient of between -100 and -3000 ppm/°C.

10. Array according to any one of claims 1 to 9, characterised in that the material used for at least one line and/or at least one column has a positive thermal coefficient resistance.

11. Array according to claim 10, characterised in that all of the lines and/or all of the columns are made of a material with a positive thermal coefficient resistance.

12. Array according to one of claims 1 to 11, characterised in that all of the lines and all of the columns are made of the same material.

13. Array according to one of claims 1 to 12, which is associated with an insulating substrate.

14. Method for producing a resistor array, wherein at least one of the resistors is obtained by placing a resistive material (16), of which the resistance has a negative thermal coefficient, on a substrate (10), including the association of this resistor with a thermally-activatable component, and including the association of at least one resistor with means for adjusting the time for which the command voltage is applied.

15. Production method according to claim 14, including the deposition of the resistive material by cathode sputtering.

16. Production method according to one of claims 14 or 15, including the deposition of a conductive material (12) on the substrate (10) so as to form lines (14) before the resistive material is deposited.

17. Production method according to one of claims 14 to 16, including the deposition of a conductive material (12) so as to form columns (24) after the resistive material has been deposited.

18. Method according to one of claims 14 to 19, including a step of depositing a material (20) insulating the lines from the columns on said substrate.

19. Method according to one of claims 14 to 18, including the choice of a material of which the resistance has a positive thermal coefficient for the lines and/or columns.

20. Method according to one of claims 14 to 19, including the association of the array with a microvalve array.

21. Device for biological use, including an array according to one of claims 1 to 13, associated with a microfluidic array.